barrier diode made of an n+-type layer having a high doping concentration and a Schottky electrode provided on the n+-type layer~~, or a pn junction diode in which a pn junction with an n+ type layer having a high doping concentration is made~~.

3. (Currently Amended) A protection circuit of a hetero-junction field effect transistor according to claim 1, wherein the number of the forward direction first diodes of the Schottky diode array is determined so that a leak current of the protection circuit becomes not larger than a leak current value of a maximum rating of the gate electrode of the hetero-junction field effect transistor.

4. (Currently Amended) A protection circuit of a hetero-junction field effect transistor according to claim 1, wherein ~~the field effect transistor is one selected from the group consisting of a junction field effect transistor, a Schottky barrier gate field effect transistor, and a hetero junction field effect transistor, and~~ the Schottky barrier diode is constructed as a compound semiconductor element formed integrally with the transistor.

5. (Currently Amended) A semiconductor device comprising a protection circuit for protecting a gate electrode or a drain electrode of a hetero-junction field effect transistor against surge breakdown, wherein

the protection circuit includes a series connection of a plurality of Schottky barrier diodes, and a plurality of reverse Schottky barrier diodes.

6. (Original) A semiconductor device according to claim 5, wherein the semiconductor device is formed on a compound semiconductor substrate.

7. (Original) A semiconductor device according to claim 6, wherein the compound semiconductor substrate is made of GaAs.

8. (Original) A semiconductor device according to claim 5, wherein the diode includes a first impurity introduction layer formed in a substrate, and a Schottky electrode formed on the first impurity introduction layer and being Schottky-connected to the first impurity introduction layer.

9. (Original) A semiconductor device according to claim 5, wherein the diode includes a first conductivity type first impurity introduction layer and a second conductivity type second impurity introduction layer provided opposite to the first impurity introduction layer.

10. (Canceled) Please cancel Claim 10.

11. (Canceled) Please cancel Claim 11.

12. (Cancel) Please cancel Claim 12.

13. (Currently Amended) A semiconductor device comprising a protection circuit for protecting a gate electrode of a hetero-junction field effect transistor against surge breakdown, wherein

the protection circuit includes a first Schottky barrier diode having an anode connected to the gate electrode, a second Schottky barrier diode having a cathode connected to the ~~a~~ cathode of the first diode, a third Schottky barrier diode having an anode connected

to ~~an~~ the anode of the second diode, and a fourth Schottky barrier diode having a cathode connected to ~~a~~ the cathode of the third diode.

14. (Currently Amended) A semiconductor device comprising a protection circuit for protecting a gate electrode of a hetero-junction field effect transistor against surge breakdown, wherein

the protection circuit includes a first Schottky barrier diode having a cathode connected to the gate electrode, a second Schottky barrier diode having an anode connected ~~an~~ the anode of the first diode, a third Schottky barrier diode having a cathode connected to ~~a~~ the cathode of the second diode, and a fourth Schottky barrier diode having an anode connected to ~~an~~ the anode of the third diode.

15. (Currently Amended) A semiconductor device comprising a protection circuit for protecting a gate electrode of a hetero-junction field effect transistor against surge breakdown, wherein

the protection circuit includes a first junction diode unit made of a plurality of diodes in which a cathode or an anode is connected to the gate electrode, and a second junction diode unit made of a plurality of diodes in which an anode or a cathode is connected to the anode or the cathode of the first diode unit.